

## **Appendix C**

### **Low Economic Growth Case Projections:**

- World Energy Consumption
  - Gross Domestic Product
  - Carbon Dioxide Emissions



**Table C1. World Total Energy Consumption by Region, Low Economic Growth Case, 1990-2030**  
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>100.8</b>	<b>118.3</b>	<b>120.9</b>	<b>128.4</b>	<b>132.9</b>	<b>137.8</b>	<b>142.0</b>	<b>146.3</b>	<b>0.7</b>
United States <sup>a</sup> . . . . .	84.7	98.3	100.7	104.8	108.5	112.2	115.3	118.5	0.6
Canada . . . . .	11.1	13.5	13.6	15.4	15.5	16.0	16.4	16.9	0.8
Mexico . . . . .	5.0	6.5	6.6	8.2	8.9	9.7	10.2	10.9	1.9
<b>OECD Europe . . . . .</b>	<b>69.9</b>	<b>79.5</b>	<b>81.1</b>	<b>83.2</b>	<b>83.5</b>	<b>82.5</b>	<b>82.4</b>	<b>82.4</b>	<b>0.1</b>
<b>OECD Asia . . . . .</b>	<b>26.6</b>	<b>36.9</b>	<b>37.8</b>	<b>39.4</b>	<b>40.9</b>	<b>41.9</b>	<b>42.5</b>	<b>43.2</b>	<b>0.5</b>
Japan . . . . .	18.4	22.2	22.6	23.2	23.5	23.6	23.5	23.5	0.1
South Korea . . . . .	3.8	8.7	9.0	9.5	10.4	11.1	11.5	12.1	1.1
Australia/New Zealand . . . . .	4.4	6.0	6.2	6.7	7.0	7.2	7.5	7.7	0.9
<b>Total OECD . . . . .</b>	<b>197.4</b>	<b>234.7</b>	<b>239.8</b>	<b>251.0</b>	<b>257.3</b>	<b>262.1</b>	<b>266.8</b>	<b>271.9</b>	<b>0.5</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>67.2</b>	<b>47.9</b>	<b>49.7</b>	<b>53.6</b>	<b>56.5</b>	<b>59.3</b>	<b>61.2</b>	<b>61.6</b>	<b>0.8</b>
Russia . . . . .	39.0	28.8	30.1	32.3	34.0	35.4	36.9	37.4	0.8
Other . . . . .	28.3	19.2	19.6	21.2	22.4	23.9	24.3	24.2	0.8
<b>Non-OECD Asia . . . . .</b>	<b>47.5</b>	<b>88.2</b>	<b>99.9</b>	<b>129.0</b>	<b>149.3</b>	<b>169.0</b>	<b>187.2</b>	<b>205.7</b>	<b>2.8</b>
China . . . . .	27.0	49.7	59.6	81.2	93.6	106.6	118.7	131.6	3.1
India . . . . .	8.0	14.4	15.4	17.9	21.0	23.8	26.5	28.9	2.4
Other Non-OECD Asia . . . . .	12.5	24.0	24.9	29.8	34.7	38.6	42.0	45.2	2.3
<b>Middle East . . . . .</b>	<b>11.3</b>	<b>19.9</b>	<b>21.1</b>	<b>25.9</b>	<b>28.4</b>	<b>30.9</b>	<b>32.8</b>	<b>34.4</b>	<b>1.9</b>
<b>Africa . . . . .</b>	<b>9.5</b>	<b>13.3</b>	<b>13.7</b>	<b>16.6</b>	<b>18.5</b>	<b>20.1</b>	<b>21.4</b>	<b>22.6</b>	<b>1.9</b>
<b>Central and South America . . . . .</b>	<b>14.5</b>	<b>21.7</b>	<b>22.5</b>	<b>27.2</b>	<b>30.4</b>	<b>32.9</b>	<b>35.2</b>	<b>37.3</b>	<b>2.0</b>
Brazil . . . . .	5.8	8.7	9.1	11.0	12.2	13.3	14.3	15.4	2.1
Other Central and South America . . . . .	8.8	13.0	13.5	16.2	18.1	19.6	20.9	21.9	1.9
<b>Total Non-OECD . . . . .</b>	<b>150.0</b>	<b>191.0</b>	<b>206.9</b>	<b>252.3</b>	<b>283.1</b>	<b>312.2</b>	<b>337.8</b>	<b>361.7</b>	<b>2.2</b>
<b>Total World . . . . .</b>	<b>347.3</b>	<b>425.7</b>	<b>446.7</b>	<b>503.3</b>	<b>540.4</b>	<b>574.3</b>	<b>604.6</b>	<b>633.6</b>	<b>1.4</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Notes: Energy totals include net imports of coal coke and electricity generated from biomass in the United States. Totals may not equal sum of components due to independent rounding. The electricity portion of the national fuel consumption values consists of generation for domestic use plus an adjustment for electricity trade based on a fuel's share of total generation in the exporting country.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C2. World Total Energy Consumption by Region and Fuel, Low Economic Growth Case, 1990-2030**  
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030	
	1990	2003	2004	2010	2015	2020	2025	2030		
<b>OECD</b>										
<b>OECD North America</b>										
Liquids .....	40.5	47.2	49.2	49.5	51.1	52.9	54.4	56.0	0.5	
Natural Gas .....	23.2	28.5	28.5	30.8	32.4	33.7	33.9	33.9	0.7	
Coal .....	20.7	24.1	24.1	26.3	27.0	28.0	30.1	32.5	1.1	
Nuclear.....	6.9	8.9	9.3	9.7	9.9	10.4	10.5	10.4	0.4	
Other .....	9.5	9.8	9.9	12.1	12.4	12.7	13.1	13.4	1.2	
<b>Total.</b> .....	<b>100.8</b>	<b>118.3</b>	<b>120.9</b>	<b>128.4</b>	<b>132.9</b>	<b>137.8</b>	<b>142.0</b>	<b>146.3</b>	<b>0.7</b>	
<b>OECD Europe</b>										
Liquids .....	28.4	31.9	32.4	31.5	31.2	30.8	30.4	30.0	-0.3	
Natural Gas .....	11.2	18.6	19.3	21.6	22.9	23.7	24.6	25.1	1.0	
Coal .....	17.6	13.2	13.1	13.0	12.3	11.5	10.7	10.3	-0.9	
Nuclear.....	7.9	9.8	9.9	10.2	10.0	9.3	9.3	9.4	-0.2	
Other .....	4.8	5.9	6.3	6.9	7.0	7.2	7.3	7.5	0.7	
<b>Total.</b> .....	<b>69.9</b>	<b>79.5</b>	<b>81.1</b>	<b>83.2</b>	<b>83.5</b>	<b>82.5</b>	<b>82.4</b>	<b>82.4</b>	<b>0.1</b>	
<b>OECD Asia</b>										
Liquids .....	14.5	17.7	17.4	17.0	17.2	17.2	17.2	17.2	0.0	
Natural Gas .....	2.9	5.3	5.3	6.2	6.6	6.9	6.9	7.1	1.1	
Coal .....	5.2	8.6	9.3	9.7	9.7	9.7	9.8	9.8	0.2	
Nuclear.....	2.5	3.5	4.0	4.6	5.3	6.0	6.3	6.9	2.1	
Other .....	1.6	1.8	1.7	1.9	2.0	2.0	2.1	2.2	1.0	
<b>Total.</b> .....	<b>26.6</b>	<b>36.9</b>	<b>37.8</b>	<b>39.4</b>	<b>40.9</b>	<b>41.9</b>	<b>42.5</b>	<b>43.2</b>	<b>0.5</b>	
<b>Total OECD</b>										
Liquids .....	83.4	96.7	98.9	98.1	99.6	101.0	102.1	103.3	0.2	
Natural Gas .....	37.2	52.4	53.1	58.6	62.0	64.3	65.4	66.1	0.8	
Coal .....	43.5	45.9	46.6	48.9	49.1	49.2	50.6	52.6	0.5	
Nuclear.....	17.3	22.2	23.2	24.5	25.3	25.7	26.1	26.8	0.6	
Other .....	15.9	17.5	17.9	20.9	21.3	21.9	22.6	23.1	1.0	
<b>Total.</b> .....	<b>197.4</b>	<b>234.7</b>	<b>239.8</b>	<b>251.0</b>	<b>257.3</b>	<b>262.1</b>	<b>266.8</b>	<b>271.9</b>	<b>0.5</b>	
<b>Non-OECD</b>										
<b>Non-OECD Europe and Eurasia</b>										
Liquids .....	19.5	9.4	9.9	10.3	10.5	10.7	10.8	10.8	0.4	
Natural Gas .....	27.5	24.2	25.1	27.0	28.4	29.6	30.4	31.0	0.8	
Coal .....	15.1	8.7	9.0	9.5	9.9	10.3	10.2	9.8	0.4	
Nuclear.....	2.5	2.9	2.9	3.2	3.7	4.7	5.5	5.5	2.5	
Other .....	2.8	2.8	2.9	3.6	3.9	4.1	4.3	4.4	1.6	
<b>Total.</b> .....	<b>67.2</b>	<b>47.9</b>	<b>49.7</b>	<b>53.6</b>	<b>56.5</b>	<b>59.3</b>	<b>61.2</b>	<b>61.6</b>	<b>0.8</b>	
<b>Non-OECD Asia</b>										
Liquids .....	13.9	28.1	30.6	38.0	42.3	46.1	50.3	55.0	2.3	
Natural Gas .....	3.0	8.1	8.9	13.1	16.3	19.4	22.7	26.3	4.2	
Coal .....	27.2	45.8	53.6	69.3	80.0	90.5	99.0	107.6	2.7	
Nuclear.....	0.4	1.0	1.1	1.6	3.0	4.3	5.5	6.2	7.0	
Other .....	3.0	5.2	5.7	7.0	7.7	8.7	9.7	10.6	2.4	
<b>Total.</b> .....	<b>47.5</b>	<b>88.2</b>	<b>99.9</b>	<b>129.0</b>	<b>149.3</b>	<b>169.0</b>	<b>187.2</b>	<b>205.7</b>	<b>2.8</b>	

See notes at end of table.

**Table C2. World Total Energy Consumption by Region and Fuel, Low Economic Growth Case, 1990-2030  
(Continued)  
(Quadrillion Btu)**

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030	
	1990	2003	2004	2010	2015	2020	2025	2030		
<b>Non-OECD (Continued)</b>										
<b>Middle East</b>										
Liquids .....	7.3	11.0	11.6	14.3	15.3	16.2	17.2	18.0	1.7	
Natural Gas .....	3.8	8.4	9.0	10.9	12.4	13.8	14.7	15.5	2.1	
Coal .....	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.5	1.3	
Nuclear.....	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	—	
Other .....	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.3	2.5	
<b>Total.....</b>	<b>11.3</b>	<b>19.9</b>	<b>21.1</b>	<b>25.9</b>	<b>28.4</b>	<b>30.9</b>	<b>32.8</b>	<b>34.4</b>	<b>1.9</b>	
<b>Africa</b>										
Liquids .....	4.3	5.6	5.7	6.8	7.6	8.4	8.7	9.1	1.8	
Natural Gas .....	1.5	2.7	2.8	3.5	4.2	4.7	5.3	5.9	2.9	
Coal .....	3.0	4.0	4.1	5.2	5.5	5.7	6.0	6.1	1.5	
Nuclear.....	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	1.7	
Other .....	0.6	0.9	0.9	1.0	1.1	1.1	1.2	1.2	1.2	
<b>Total.....</b>	<b>9.5</b>	<b>13.3</b>	<b>13.7</b>	<b>16.6</b>	<b>18.5</b>	<b>20.1</b>	<b>21.4</b>	<b>22.6</b>	<b>1.9</b>	
<b>Central and South America</b>										
Liquids .....	7.8	11.1	11.5	13.1	14.6	15.7	16.9	17.8	1.7	
Natural Gas .....	2.2	4.0	4.4	5.4	6.2	6.7	7.1	7.5	2.1	
Coal .....	0.6	0.8	0.8	1.1	1.2	1.4	1.4	1.5	2.2	
Nuclear.....	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.4	2.3	
Other .....	3.9	5.6	5.6	7.3	8.0	8.7	9.4	10.3	2.3	
<b>Total.....</b>	<b>14.5</b>	<b>21.7</b>	<b>22.5</b>	<b>27.2</b>	<b>30.4</b>	<b>32.9</b>	<b>35.2</b>	<b>37.3</b>	<b>2.0</b>	
<b>Total Non-OECD</b>										
Liquids .....	52.7	65.2	69.3	82.5	90.2	97.1	103.9	110.7	1.8	
Natural Gas .....	38.0	47.4	50.3	59.9	67.5	74.2	80.2	86.3	2.1	
Coal .....	45.9	59.7	67.9	85.5	97.2	108.3	117.1	125.5	2.4	
Nuclear.....	3.1	4.2	4.3	5.3	7.2	9.6	11.7	12.4	4.2	
Other .....	10.3	14.5	15.3	19.1	21.0	22.9	24.9	26.8	2.2	
<b>Total.....</b>	<b>150.0</b>	<b>191.1</b>	<b>206.9</b>	<b>252.3</b>	<b>283.1</b>	<b>312.2</b>	<b>337.8</b>	<b>361.7</b>	<b>2.2</b>	
<b>Total World</b>										
Liquids .....	136.2	161.9	168.2	180.6	189.8	198.1	206.0	214.0	0.9	
Natural Gas .....	75.2	99.8	103.4	118.5	129.4	138.6	145.6	152.4	1.5	
Coal .....	89.4	105.6	114.5	134.4	146.2	157.5	167.7	178.2	1.7	
Nuclear.....	20.4	26.4	27.5	29.8	32.5	35.3	37.8	39.2	1.4	
Other .....	26.2	32.1	33.2	40.0	42.4	44.8	47.5	49.9	1.6	
<b>Total.....</b>	<b>347.3</b>	<b>425.7</b>	<b>446.7</b>	<b>503.3</b>	<b>540.4</b>	<b>574.3</b>	<b>604.6</b>	<b>633.6</b>	<b>1.4</b>	

Notes: Energy totals include net imports of coal coke and electricity generated from biomass in the United States. Totals may not equal sum of components due to independent rounding. The electricity portion of the national fuel consumption values consists of generation for domestic use plus an adjustment for electricity trade based on a fuel's share of total generation in the exporting country.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C3. World Gross Domestic Product (GDP) by Region Expressed in Purchasing Power Parity,  
Low Economic Growth Case, 1990-2030  
(Billion 2000 Dollars)**

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America .....</b>	<b>8,477</b>	<b>12,250</b>	<b>12,725</b>	<b>14,767</b>	<b>16,506</b>	<b>18,762</b>	<b>20,865</b>	<b>23,155</b>	<b>2.3</b>
United States <sup>a</sup> .....	7,113	10,301	10,704	12,359	13,777	15,686	17,399	19,249	2.3
Canada .....	684	973	1,005	1,166	1,285	1,392	1,505	1,626	1.9
Mexico.....	680	975	1,016	1,242	1,444	1,684	1,961	2,279	3.2
<b>OECD Europe .....</b>	<b>8,067</b>	<b>10,850</b>	<b>11,132</b>	<b>12,640</b>	<b>13,806</b>	<b>15,040</b>	<b>16,310</b>	<b>17,702</b>	<b>1.8</b>
<b>OECD Asia.....</b>	<b>3,621</b>	<b>4,630</b>	<b>4,761</b>	<b>5,444</b>	<b>5,879</b>	<b>6,203</b>	<b>6,494</b>	<b>6,815</b>	<b>1.4</b>
Japan .....	2,862	3,289	3,363	3,539	3,612	3,679	3,736	3,789	0.5
South Korea .....	331	683	715	945	1,126	1,272	1,415	1,570	3.1
Australia/New Zealand .....	429	658	682	784	886	1,003	1,131	1,275	2.4
<b>Total OECD .....</b>	<b>20,165</b>	<b>27,730</b>	<b>28,619</b>	<b>32,851</b>	<b>36,190</b>	<b>40,006</b>	<b>43,669</b>	<b>47,672</b>	<b>2.0</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia...</b>	<b>3,601</b>	<b>3,081</b>	<b>3,332</b>	<b>4,640</b>	<b>5,520</b>	<b>6,380</b>	<b>7,302</b>	<b>8,324</b>	<b>3.6</b>
Russia.....	2,241	1,780	1,907	2,575	3,015	3,439	3,906	4,410	3.3
Other .....	1,360	1,301	1,425	2,065	2,505	2,941	3,397	3,913	4.0
<b>Non-OECD Asia.....</b>	<b>5,995</b>	<b>14,573</b>	<b>15,841</b>	<b>24,236</b>	<b>31,582</b>	<b>40,297</b>	<b>50,186</b>	<b>61,987</b>	<b>5.4</b>
China.....	2,002	7,013	7,722	12,756	17,176	22,458	28,369	35,353	6.0
India .....	1,703	3,434	3,727	5,544	7,150	9,027	11,227	13,925	5.2
Other Non-OECD Asia .....	2,291	4,125	4,393	5,936	7,257	8,812	10,589	12,709	4.2
<b>Middle East .....</b>	<b>820</b>	<b>1,364</b>	<b>1,453</b>	<b>1,915</b>	<b>2,305</b>	<b>2,730</b>	<b>3,210</b>	<b>3,768</b>	<b>3.7</b>
<b>Africa .....</b>	<b>1,450</b>	<b>2,056</b>	<b>2,161</b>	<b>2,887</b>	<b>3,591</b>	<b>4,421</b>	<b>5,409</b>	<b>6,605</b>	<b>4.4</b>
<b>Central and South America .....</b>	<b>2,191</b>	<b>3,110</b>	<b>3,297</b>	<b>4,199</b>	<b>4,948</b>	<b>5,802</b>	<b>6,776</b>	<b>7,899</b>	<b>3.4</b>
Brazil .....	1,022	1,378	1,446	1,744	2,017	2,322	2,665	3,053	2.9
Other Central and South America..	1,169	1,733	1,852	2,455	2,932	3,479	4,111	4,846	3.8
<b>Total Non-OECD .....</b>	<b>14,057</b>	<b>24,184</b>	<b>26,085</b>	<b>37,876</b>	<b>47,947</b>	<b>59,629</b>	<b>72,882</b>	<b>88,582</b>	<b>4.8</b>
<b>Total World .....</b>	<b>34,222</b>	<b>51,914</b>	<b>54,704</b>	<b>70,727</b>	<b>84,138</b>	<b>99,635</b>	<b>116,552</b>	<b>136,254</b>	<b>3.6</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding. GDP growth rates for China and India were adjusted, based on the analyst's judgment.

Sources: **History:** Global Insight, Inc., *World Overview* (Lexington, MA, various issues). **Projections:** Global Insight, Inc., *World Overview*, Fourth Quarter 2006 (Lexington, MA, January 2007); and Energy Information Administration, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington DC, February 2007), Table B4.

**Table C4. World Liquids Consumption by Region, Low Economic Growth Case, 1990-2030**  
 (Million Barrels Oil Equivalent per Day)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>20.5</b>	<b>24.2</b>	<b>25.0</b>	<b>25.3</b>	<b>26.1</b>	<b>27.0</b>	<b>27.7</b>	<b>28.5</b>	<b>0.5</b>
United States <sup>a</sup> . . . . .	17.0	20.0	20.7	20.9	21.6	22.3	23.0	23.7	0.5
Canada . . . . .	1.7	2.2	2.3	2.3	2.3	2.2	2.2	2.2	-0.2
Mexico . . . . .	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.7	1.2
<b>OECD Europe . . . . .</b>	<b>13.7</b>	<b>15.4</b>	<b>15.6</b>	<b>15.2</b>	<b>15.1</b>	<b>14.9</b>	<b>14.7</b>	<b>14.5</b>	<b>-0.3</b>
<b>OECD Asia . . . . .</b>	<b>7.1</b>	<b>8.7</b>	<b>8.5</b>	<b>8.4</b>	<b>8.5</b>	<b>8.5</b>	<b>8.4</b>	<b>8.4</b>	<b>0.0</b>
Japan . . . . .	5.2	5.5	5.4	5.1	5.0	4.9	4.9	4.8	-0.4
South Korea . . . . .	1.0	2.2	2.1	2.2	2.4	2.4	2.4	2.5	0.6
Australia/New Zealand . . . . .	0.8	1.0	1.0	1.1	1.1	1.1	1.2	1.2	0.5
Total OECD . . . . .	41.3	48.3	49.1	48.9	49.6	50.3	50.9	51.5	0.2
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>9.3</b>	<b>4.6</b>	<b>4.8</b>	<b>5.0</b>	<b>5.1</b>	<b>5.2</b>	<b>5.2</b>	<b>5.3</b>	<b>0.4</b>
Russia . . . . .	5.4	2.7	2.8	2.8	2.9	2.9	2.9	2.9	0.2
Other . . . . .	3.9	1.9	2.0	2.2	2.2	2.3	2.3	2.3	0.5
<b>Non-OECD Asia . . . . .</b>	<b>6.6</b>	<b>13.6</b>	<b>14.8</b>	<b>18.4</b>	<b>20.5</b>	<b>22.3</b>	<b>24.4</b>	<b>26.7</b>	<b>2.3</b>
China . . . . .	2.3	5.6	6.4	9.2	10.1	11.1	12.4	14.0	3.1
India . . . . .	1.2	2.3	2.5	2.6	3.1	3.4	3.7	3.9	1.8
Other Non-OECD Asia . . . . .	3.1	5.7	6.0	6.5	7.3	7.8	8.3	8.8	1.5
<b>Middle East . . . . .</b>	<b>3.5</b>	<b>5.4</b>	<b>5.7</b>	<b>7.0</b>	<b>7.5</b>	<b>7.9</b>	<b>8.4</b>	<b>8.8</b>	<b>1.7</b>
<b>Africa . . . . .</b>	<b>2.1</b>	<b>2.7</b>	<b>2.8</b>	<b>3.3</b>	<b>3.7</b>	<b>4.1</b>	<b>4.2</b>	<b>4.4</b>	<b>1.8</b>
<b>Central and South America . . . . .</b>	<b>3.8</b>	<b>5.2</b>	<b>5.4</b>	<b>6.4</b>	<b>7.1</b>	<b>7.7</b>	<b>8.2</b>	<b>8.7</b>	<b>1.8</b>
Brazil . . . . .	1.5	2.1	2.1	2.5	2.7	2.9	3.1	3.3	1.6
Other Central and South America . . . . .	2.3	3.2	3.3	3.9	4.4	4.7	5.1	5.4	2.0
Total Non-OECD . . . . .	25.3	31.5	33.4	40.1	43.9	47.2	50.5	53.8	1.8
<b>Total World . . . . .</b>	<b>66.5</b>	<b>79.8</b>	<b>82.5</b>	<b>89.0</b>	<b>93.5</b>	<b>97.6</b>	<b>101.4</b>	<b>105.3</b>	<b>0.9</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C5. World Natural Gas Consumption by Region, Low Economic Growth Case, 1990-2030**  
 (Trillion Cubic Feet)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>22.5</b>	<b>27.4</b>	<b>27.6</b>	<b>29.8</b>	<b>31.3</b>	<b>32.6</b>	<b>32.7</b>	<b>32.8</b>	<b>0.7</b>
United States <sup>a</sup> . . . . .	19.2	22.3	22.4	23.5	24.5	25.1	24.7	24.2	0.3
Canada . . . . .	2.4	3.4	3.4	4.0	4.1	4.4	4.6	4.8	1.3
Mexico . . . . .	0.9	1.7	1.8	2.4	2.8	3.1	3.4	3.8	2.9
<b>OECD Europe . . . . .</b>	<b>11.6</b>	<b>18.2</b>	<b>18.8</b>	<b>21.0</b>	<b>22.3</b>	<b>23.1</b>	<b>24.0</b>	<b>24.5</b>	<b>1.0</b>
<b>OECD Asia . . . . .</b>	<b>2.8</b>	<b>5.0</b>	<b>5.0</b>	<b>5.8</b>	<b>6.3</b>	<b>6.5</b>	<b>6.5</b>	<b>6.7</b>	<b>1.1</b>
Japan . . . . .	1.9	3.0	3.0	3.5	3.7	3.8	3.8	3.8	1.0
South Korea . . . . .	0.1	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.1
Australia/New Zealand . . . . .	0.8	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.5
Total OECD . . . . .	<b>36.8</b>	<b>50.5</b>	<b>51.4</b>	<b>56.7</b>	<b>59.9</b>	<b>62.2</b>	<b>63.2</b>	<b>63.9</b>	<b>0.8</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>26.7</b>	<b>23.6</b>	<b>24.4</b>	<b>26.3</b>	<b>27.6</b>	<b>28.8</b>	<b>29.6</b>	<b>30.2</b>	<b>0.8</b>
Russia . . . . .	17.3	15.3	16.0	17.2	18.0	18.5	18.9	19.2	0.7
Other . . . . .	9.5	8.3	8.4	9.1	9.6	10.3	10.7	11.0	1.0
<b>Non-OECD Asia . . . . .</b>	<b>2.9</b>	<b>7.7</b>	<b>8.5</b>	<b>12.3</b>	<b>15.3</b>	<b>18.2</b>	<b>21.3</b>	<b>24.6</b>	<b>4.2</b>
China . . . . .	0.5	1.1	1.4	2.8	3.6	4.4	5.3	6.4	6.1
India . . . . .	0.4	1.0	1.1	1.7	2.0	2.4	3.0	3.4	4.5
Other Non-OECD Asia . . . . .	2.0	5.6	6.0	7.7	9.6	11.3	13.0	14.8	3.5
<b>Middle East . . . . .</b>	<b>3.6</b>	<b>8.0</b>	<b>8.6</b>	<b>10.4</b>	<b>11.8</b>	<b>13.2</b>	<b>14.0</b>	<b>14.8</b>	<b>2.1</b>
<b>Africa . . . . .</b>	<b>1.4</b>	<b>2.5</b>	<b>2.6</b>	<b>3.3</b>	<b>3.9</b>	<b>4.4</b>	<b>4.9</b>	<b>5.5</b>	<b>2.9</b>
<b>Central and South America . . . . .</b>	<b>2.0</b>	<b>3.7</b>	<b>4.1</b>	<b>5.1</b>	<b>5.8</b>	<b>6.2</b>	<b>6.6</b>	<b>7.0</b>	<b>2.1</b>
Brazil . . . . .	0.1	0.5	0.6	0.8	0.9	1.0	1.1	1.1	2.4
Other Central and South America . . . . .	1.9	3.2	3.5	4.2	4.9	5.2	5.6	5.8	2.0
Total Non-OECD . . . . .	<b>36.5</b>	<b>45.5</b>	<b>48.2</b>	<b>57.2</b>	<b>64.4</b>	<b>70.8</b>	<b>76.4</b>	<b>82.0</b>	<b>2.1</b>
<b>Total World . . . . .</b>	<b>73.4</b>	<b>96.0</b>	<b>99.6</b>	<b>113.9</b>	<b>124.3</b>	<b>133.0</b>	<b>139.6</b>	<b>145.9</b>	<b>1.5</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

**Table C6. World Coal Consumption by Region, Low Economic Growth Case, 1990-2030**  
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>20.7</b>	<b>24.1</b>	<b>24.1</b>	<b>26.3</b>	<b>27.0</b>	<b>28.0</b>	<b>30.1</b>	<b>32.5</b>	<b>1.1</b>
United States <sup>a</sup> . . . . .	19.2	22.3	22.6	24.1	24.9	25.8	27.7	30.2	1.1
Canada . . . . .	1.3	1.4	1.2	1.5	1.4	1.5	1.5	1.5	0.9
Mexico . . . . .	0.2	0.4	0.3	0.6	0.7	0.7	0.8	0.8	3.4
<b>OECD Europe . . . . .</b>	<b>17.6</b>	<b>13.2</b>	<b>13.1</b>	<b>13.0</b>	<b>12.3</b>	<b>11.5</b>	<b>10.7</b>	<b>10.3</b>	<b>-0.9</b>
<b>OECD Asia . . . . .</b>	<b>5.2</b>	<b>8.6</b>	<b>9.3</b>	<b>9.7</b>	<b>9.7</b>	<b>9.7</b>	<b>9.8</b>	<b>9.8</b>	<b>0.2</b>
Japan . . . . .	2.7	4.3	4.8	4.7	4.6	4.4	4.3	4.2	-0.5
South Korea . . . . .	0.9	1.9	2.1	2.2	2.3	2.5	2.6	2.6	0.8
Australia/New Zealand . . . . .	1.5	2.3	2.4	2.8	2.7	2.8	3.0	3.0	0.8
Total OECD . . . . .	<b>43.5</b>	<b>45.9</b>	<b>46.6</b>	<b>48.9</b>	<b>49.1</b>	<b>49.2</b>	<b>50.6</b>	<b>52.6</b>	<b>0.5</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>15.1</b>	<b>8.7</b>	<b>9.0</b>	<b>9.5</b>	<b>9.9</b>	<b>10.3</b>	<b>10.2</b>	<b>9.8</b>	<b>0.4</b>
Russia . . . . .	6.8	4.5	4.8	5.1	5.1	5.4	5.5	5.4	0.5
Other . . . . .	8.3	4.2	4.2	4.4	4.8	4.9	4.7	4.4	0.2
<b>Non-OECD Asia . . . . .</b>	<b>27.2</b>	<b>45.8</b>	<b>53.6</b>	<b>69.3</b>	<b>80.0</b>	<b>90.5</b>	<b>99.0</b>	<b>107.6</b>	<b>2.7</b>
China . . . . .	20.3	33.7	41.1	54.4	62.9	71.3	78.4	85.9	2.9
India . . . . .	4.3	7.5	8.1	9.1	10.4	11.6	12.6	13.7	2.0
Other Non-OECD Asia . . . . .	2.6	4.6	4.3	5.7	6.7	7.6	7.9	8.0	2.4
<b>Middle East . . . . .</b>	<b>0.1</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>1.3</b>
<b>Africa . . . . .</b>	<b>3.0</b>	<b>4.0</b>	<b>4.1</b>	<b>5.2</b>	<b>5.5</b>	<b>5.7</b>	<b>6.0</b>	<b>6.1</b>	<b>1.5</b>
<b>Central and South America . . . . .</b>	<b>0.6</b>	<b>0.8</b>	<b>0.8</b>	<b>1.1</b>	<b>1.2</b>	<b>1.4</b>	<b>1.4</b>	<b>1.5</b>	<b>2.2</b>
Brazil . . . . .	0.4	0.5	0.5	0.7	0.8	0.8	0.8	0.9	2.7
Other Central and South America . . . . .	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.6	1.6
Total Non-OECD . . . . .	<b>45.9</b>	<b>59.7</b>	<b>67.9</b>	<b>85.5</b>	<b>97.2</b>	<b>108.3</b>	<b>117.1</b>	<b>125.5</b>	<b>2.4</b>
<b>Total World . . . . .</b>	<b>89.4</b>	<b>105.6</b>	<b>114.5</b>	<b>134.4</b>	<b>146.2</b>	<b>157.5</b>	<b>167.7</b>	<b>178.2</b>	<b>1.7</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C7. World Nuclear Energy Consumption by Region, Low Economic Growth Case, 1990-2030**  
 (Billion Kilowatthours)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>649</b>	<b>845</b>	<b>883</b>	<b>910</b>	<b>933</b>	<b>982</b>	<b>990</b>	<b>982</b>	<b>0.4</b>
United States <sup>a</sup> . . . . .	577	764	789	789	809	855	861	845	0.3
Canada . . . . .	69	71	86	110	113	116	118	126	1.5
Mexico . . . . .	3	10	9	11	11	11	11	11	0.9
<b>OECD Europe . . . . .</b>	<b>743</b>	<b>931</b>	<b>941</b>	<b>914</b>	<b>902</b>	<b>835</b>	<b>831</b>	<b>847</b>	<b>-0.4</b>
<b>OECD Asia . . . . .</b>	<b>242</b>	<b>351</b>	<b>396</b>	<b>433</b>	<b>497</b>	<b>559</b>	<b>592</b>	<b>646</b>	<b>1.9</b>
Japan . . . . .	192	228	272	299	325	352	370	394	1.4
South Korea . . . . .	50	123	124	134	172	207	222	252	2.8
Australia/New Zealand . . . . .	0	0	0	0	0	0	0	0	—
<b>Total OECD . . . . .</b>	<b>1,635</b>	<b>2,128</b>	<b>2,220</b>	<b>2,257</b>	<b>2,332</b>	<b>2,376</b>	<b>2,413</b>	<b>2,475</b>	<b>0.4</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>219</b>	<b>260</b>	<b>263</b>	<b>278</b>	<b>323</b>	<b>405</b>	<b>479</b>	<b>476</b>	<b>2.3</b>
Russia . . . . .	115	141	137	149	190	236	299	315	3.2
Other . . . . .	104	119	125	129	133	169	180	161	1.0
<b>Non-OECD Asia . . . . .</b>	<b>38</b>	<b>97</b>	<b>103</b>	<b>148</b>	<b>265</b>	<b>389</b>	<b>495</b>	<b>557</b>	<b>6.7</b>
China . . . . .	0	42	48	64	135	217	283	329	7.7
India . . . . .	6	16	15	37	66	97	124	144	9.1
Other Non-OECD Asia . . . . .	32	39	40	47	64	75	88	84	2.9
<b>Middle East . . . . .</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>—</b>
<b>Africa . . . . .</b>	<b>8</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>21</b>	<b>21</b>	<b>1.5</b>
<b>Central and South America . . . . .</b>	<b>9</b>	<b>20</b>	<b>19</b>	<b>20</b>	<b>28</b>	<b>34</b>	<b>33</b>	<b>33</b>	<b>2.2</b>
Brazil . . . . .	2	13	12	13	18	22	22	22	2.5
Other Central and South America . . . . .	7	7	7	7	10	12	11	11	1.6
<b>Total Non-OECD . . . . .</b>	<b>274</b>	<b>390</b>	<b>399</b>	<b>465</b>	<b>637</b>	<b>849</b>	<b>1,034</b>	<b>1,093</b>	<b>4.0</b>
<b>Total World . . . . .</b>	<b>1,909</b>	<b>2,518</b>	<b>2,619</b>	<b>2,722</b>	<b>2,969</b>	<b>3,225</b>	<b>3,447</b>	<b>3,568</b>	<b>1.2</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

**Table C8. World Consumption of Hydroelectricity and Other Renewable Energy by Region,  
Low Economic Growth Case, 1990-2030**  
(Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America .....</b>	<b>9.5</b>	<b>9.8</b>	<b>9.9</b>	<b>12.1</b>	<b>12.4</b>	<b>12.7</b>	<b>13.1</b>	<b>13.4</b>	<b>1.2</b>
United States <sup>a</sup> .....	6.1	6.0	6.0	7.5	7.7	7.9	8.0	8.1	1.1
Canada .....	3.1	3.5	3.5	4.0	4.0	4.2	4.4	4.7	1.2
Mexico.....	0.3	0.4	0.4	0.6	0.6	0.7	0.7	0.7	2.1
<b>OECD Europe .....</b>	<b>4.8</b>	<b>5.9</b>	<b>6.3</b>	<b>6.9</b>	<b>7.0</b>	<b>7.2</b>	<b>7.3</b>	<b>7.5</b>	<b>0.7</b>
<b>OECD Asia.....</b>	<b>1.6</b>	<b>1.8</b>	<b>1.7</b>	<b>1.9</b>	<b>2.0</b>	<b>2.0</b>	<b>2.1</b>	<b>2.2</b>	<b>1.0</b>
Japan .....	1.1	1.2	1.1	1.2	1.3	1.3	1.3	1.4	0.8
South Korea .....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.0
Australia/New Zealand .....	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	1.1
<b>Total OECD .....</b>	<b>15.9</b>	<b>17.5</b>	<b>17.9</b>	<b>20.9</b>	<b>21.3</b>	<b>21.9</b>	<b>22.6</b>	<b>23.1</b>	<b>1.0</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia...</b>	<b>2.8</b>	<b>2.8</b>	<b>2.9</b>	<b>3.6</b>	<b>3.9</b>	<b>4.1</b>	<b>4.3</b>	<b>4.4</b>	<b>1.6</b>
Russia.....	1.8	1.6	1.7	2.1	2.4	2.4	2.6	2.6	1.7
Other .....	1.0	1.2	1.2	1.4	1.6	1.7	1.7	1.8	1.5
<b>Non-OECD Asia.....</b>	<b>3.0</b>	<b>5.2</b>	<b>5.7</b>	<b>7.0</b>	<b>7.7</b>	<b>8.7</b>	<b>9.7</b>	<b>10.6</b>	<b>2.4</b>
China.....	1.3	2.9	3.3	3.9	4.5	5.1	5.6	6.1	2.4
India .....	0.7	0.8	0.9	1.0	1.1	1.3	1.5	1.6	2.3
Other Non-OECD Asia .....	0.9	1.5	1.5	2.1	2.1	2.4	2.6	2.8	2.5
<b>Middle East .....</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>	<b>0.3</b>	<b>2.5</b>
<b>Africa .....</b>	<b>0.6</b>	<b>0.9</b>	<b>0.9</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>Central and South America .....</b>	<b>3.9</b>	<b>5.6</b>	<b>5.6</b>	<b>7.3</b>	<b>8.0</b>	<b>8.7</b>	<b>9.4</b>	<b>10.3</b>	<b>2.3</b>
Brazil.....	2.2	3.0	3.1	4.2	4.7	5.2	5.7	6.4	2.8
Other Central and South America..	1.7	2.5	2.5	3.1	3.3	3.5	3.7	3.9	1.7
<b>Total Non-OECD .....</b>	<b>10.3</b>	<b>14.5</b>	<b>15.3</b>	<b>19.1</b>	<b>21.0</b>	<b>22.9</b>	<b>24.9</b>	<b>26.8</b>	<b>2.2</b>
<b>Total World .....</b>	<b>26.2</b>	<b>32.1</b>	<b>33.2</b>	<b>40.0</b>	<b>42.4</b>	<b>44.8</b>	<b>47.5</b>	<b>49.9</b>	<b>1.6</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding. U.S. totals include net electricity imports, methanol, and liquid hydrogen.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D12106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C9. World Carbon Dioxide Emissions by Region, Low Economic Growth Case, 1990-2030**  
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America . . . . .</b>	<b>5,763</b>	<b>6,775</b>	<b>6,893</b>	<b>7,237</b>	<b>7,513</b>	<b>7,798</b>	<b>8,103</b>	<b>8,446</b>	<b>0.8</b>
United States <sup>a</sup> . . . . .	4,989	5,800	5,923	6,125	6,363	6,583	6,842	7,141	0.7
Canada . . . . .	474	589	584	639	638	657	668	676	0.6
Mexico . . . . .	300	385	385	473	513	558	593	629	1.9
<b>OECD Europe . . . . .</b>	<b>4,092</b>	<b>4,321</b>	<b>4,381</b>	<b>4,434</b>	<b>4,419</b>	<b>4,355</b>	<b>4,307</b>	<b>4,269</b>	<b>-0.1</b>
<b>OECD Asia . . . . .</b>	<b>1,543</b>	<b>2,129</b>	<b>2,183</b>	<b>2,237</b>	<b>2,274</b>	<b>2,290</b>	<b>2,302</b>	<b>2,309</b>	<b>0.2</b>
Japan . . . . .	1,015	1,244	1,262	1,257	1,249	1,228	1,204	1,183	-0.2
South Korea . . . . .	238	475	497	514	549	570	584	601	0.7
Australia/New Zealand . . . . .	291	410	424	466	476	492	514	525	0.8
<b>Total OECD . . . . .</b>	<b>11,399</b>	<b>13,225</b>	<b>13,457</b>	<b>13,907</b>	<b>14,206</b>	<b>14,443</b>	<b>14,712</b>	<b>15,023</b>	<b>0.4</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia . . . . .</b>	<b>4,193</b>	<b>2,717</b>	<b>2,819</b>	<b>2,993</b>	<b>3,119</b>	<b>3,232</b>	<b>3,272</b>	<b>3,275</b>	<b>0.6</b>
Russia . . . . .	2,334	1,602	1,685	1,777	1,832	1,890	1,926	1,937	0.5
Other . . . . .	1,859	1,115	1,134	1,216	1,287	1,342	1,346	1,338	0.6
<b>Non-OECD Asia . . . . .</b>	<b>3,627</b>	<b>6,479</b>	<b>7,411</b>	<b>9,564</b>	<b>11,004</b>	<b>12,381</b>	<b>13,616</b>	<b>14,899</b>	<b>2.7</b>
China . . . . .	2,241	3,898	4,707	6,400	7,340	8,305	9,185	10,143	3.0
India . . . . .	578	1,040	1,111	1,264	1,457	1,625	1,789	1,936	2.2
Other Non-OECD Asia . . . . .	807	1,542	1,593	1,899	2,207	2,450	2,642	2,820	2.2
<b>Middle East . . . . .</b>	<b>705</b>	<b>1,211</b>	<b>1,289</b>	<b>1,578</b>	<b>1,725</b>	<b>1,867</b>	<b>1,979</b>	<b>2,080</b>	<b>1.9</b>
<b>Africa . . . . .</b>	<b>649</b>	<b>895</b>	<b>919</b>	<b>1,123</b>	<b>1,248</b>	<b>1,346</b>	<b>1,427</b>	<b>1,495</b>	<b>1.9</b>
<b>Central and South America . . . . .</b>	<b>673</b>	<b>981</b>	<b>1,027</b>	<b>1,213</b>	<b>1,358</b>	<b>1,465</b>	<b>1,562</b>	<b>1,647</b>	<b>1.8</b>
Brazil . . . . .	220	317	334	396	435	465	491	523	1.7
Other Central and South America . . . . .	453	664	693	818	923	1,000	1,071	1,125	1.9
<b>Total Non-OECD . . . . .</b>	<b>9,847</b>	<b>12,283</b>	<b>13,465</b>	<b>16,472</b>	<b>18,454</b>	<b>20,291</b>	<b>21,856</b>	<b>23,396</b>	<b>2.1</b>
<b>Total World . . . . .</b>	<b>21,246</b>	<b>25,508</b>	<b>26,922</b>	<b>30,379</b>	<b>32,660</b>	<b>34,734</b>	<b>36,568</b>	<b>38,419</b>	<b>1.4</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Note: The U.S. numbers include carbon dioxide emissions attributable to renewable energy sources.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

**Table C10. World Carbon Dioxide Emissions from Liquids Use by Region, Low Economic Growth Case, 1990-2030**  
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America .....</b>	2,633	3,029	3,140	3,143	3,261	3,384	3,487	3,600	0.5
United States <sup>a</sup> .....	2,178	2,500	2,598	2,578	2,686	2,787	2,884	2,983	0.5
Canada .....	224	279	290	289	285	282	279	276	-0.2
Mexico.....	231	250	253	276	291	315	325	341	1.2
<b>OECD Europe .....</b>	1,867	2,099	2,125	2,072	2,049	2,024	1,999	1,972	-0.3
<b>OECD Asia.....</b>	921	1,068	1,048	1,026	1,038	1,037	1,036	1,035	0.0
Japan .....	667	683	665	633	623	613	603	594	-0.4
South Korea .....	144	248	245	251	268	273	277	283	0.6
Australia/New Zealand .....	110	137	138	142	147	152	156	158	0.5
<b>Total OECD .....</b>	5,420	6,196	6,314	6,240	6,348	6,445	6,523	6,607	0.2
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia...</b>	1,350	636	663	692	705	720	726	728	0.4
Russia.....	782	364	376	384	391	395	399	398	0.2
Other .....	568	271	287	308	314	326	327	330	0.5
<b>Non-OECD Asia.....</b>	950	1,822	1,983	2,452	2,726	2,970	3,241	3,539	2.3
China.....	325	711	816	1,179	1,283	1,421	1,583	1,781	3.1
India .....	160	293	306	328	388	422	459	486	1.8
Other Non-OECD Asia .....	464	818	861	945	1,056	1,128	1,198	1,272	1.5
<b>Middle East .....</b>	493	735	778	963	1,026	1,089	1,156	1,211	1.7
<b>Africa .....</b>	298	387	395	467	528	579	602	628	1.8
<b>Central and South America .....</b>	503	696	720	824	915	988	1,060	1,116	1.7
Brazil .....	180	248	258	288	314	336	356	374	1.4
Other Central and South America..	323	449	462	535	601	652	703	741	1.8
<b>Total Non-OECD .....</b>	3,594	4,276	4,538	5,398	5,899	6,347	6,784	7,222	1.8
<b>Total World .....</b>	9,014	10,472	10,852	11,638	12,248	12,792	13,307	13,829	0.9

<sup>a</sup>Includes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

## Appendix C

**Table C11. World Carbon Dioxide Emissions from Natural Gas Use by Region, Low Economic Growth Case, 1990-2030**  
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America .....</b>	<b>1,207</b>	<b>1,477</b>	<b>1,483</b>	<b>1,620</b>	<b>1,704</b>	<b>1,775</b>	<b>1,781</b>	<b>1,785</b>	<b>0.7</b>
United States <sup>a</sup> .....	1,026	1,197	1,198	1,269	1,325	1,359	1,337	1,311	0.3
Canada .....	127	183	183	214	221	237	248	258	1.3
Mexico.....	54	98	102	138	158	178	196	216	2.9
<b>OECD Europe .....</b>	<b>590</b>	<b>984</b>	<b>1,021</b>	<b>1,140</b>	<b>1,211</b>	<b>1,251</b>	<b>1,299</b>	<b>1,326</b>	<b>1.0</b>
<b>OECD Asia.....</b>	<b>152</b>	<b>279</b>	<b>282</b>	<b>327</b>	<b>351</b>	<b>364</b>	<b>367</b>	<b>375</b>	<b>1.1</b>
Japan .....	102	168	163	196	206	211	210	209	1.0
South Korea .....	6	50	58	63	68	72	74	77	1.1
Australia/New Zealand .....	44	61	61	69	77	81	82	88	1.5
<b>Total OECD .....</b>	<b>1,949</b>	<b>2,740</b>	<b>2,786</b>	<b>3,088</b>	<b>3,266</b>	<b>3,389</b>	<b>3,447</b>	<b>3,486</b>	<b>0.9</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia...</b>	<b>1,450</b>	<b>1,280</b>	<b>1,328</b>	<b>1,427</b>	<b>1,500</b>	<b>1,563</b>	<b>1,606</b>	<b>1,638</b>	<b>0.8</b>
Russia.....	928	828	868	929	974	1,003	1,024	1,040	0.7
Other .....	521	452	460	498	526	561	581	598	1.0
<b>Non-OECD Asia.....</b>	<b>160</b>	<b>428</b>	<b>471</b>	<b>691</b>	<b>860</b>	<b>1,024</b>	<b>1,200</b>	<b>1,389</b>	<b>4.2</b>
China.....	30	70	83	172	220	269	325	391	6.1
India .....	24	56	64	101	119	143	173	201	4.5
Other Non-OECD Asia .....	106	301	325	418	521	612	702	798	3.5
<b>Middle East .....</b>	<b>199</b>	<b>442</b>	<b>476</b>	<b>573</b>	<b>653</b>	<b>730</b>	<b>774</b>	<b>820</b>	<b>2.1</b>
<b>Africa .....</b>	<b>80</b>	<b>144</b>	<b>148</b>	<b>184</b>	<b>219</b>	<b>250</b>	<b>280</b>	<b>312</b>	<b>2.9</b>
<b>Central and South America .....</b>	<b>116</b>	<b>209</b>	<b>231</b>	<b>287</b>	<b>328</b>	<b>352</b>	<b>375</b>	<b>395</b>	<b>2.1</b>
Brazil.....	6	27	34	45	50	54	58	63	2.4
Other Central and South America..	110	181	197	242	277	298	317	332	2.0
<b>Total Non-OECD .....</b>	<b>2,005</b>	<b>2,502</b>	<b>2,655</b>	<b>3,163</b>	<b>3,561</b>	<b>3,920</b>	<b>4,235</b>	<b>4,554</b>	<b>2.1</b>
<b>Total World .....</b>	<b>3,954</b>	<b>5,242</b>	<b>5,441</b>	<b>6,250</b>	<b>6,827</b>	<b>7,309</b>	<b>7,682</b>	<b>8,040</b>	<b>1.5</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

**Table C12. World Carbon Dioxide Emissions from Coal Use by Region, Low Economic Growth Case, 1990-2030**  
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
<b>OECD</b>									
<b>OECD North America .....</b>	<b>1,923</b>	<b>2,258</b>	<b>2,258</b>	<b>2,461</b>	<b>2,535</b>	<b>2,626</b>	<b>2,821</b>	<b>3,048</b>	<b>1.2</b>
United States <sup>a</sup> .....	1,784	2,093	2,115	2,265	2,340	2,423	2,607	2,834	1.1
Canada .....	123	128	112	137	132	138	141	142	0.9
Mexico.....	15	37	30	59	64	65	73	71	3.4
<b>OECD Europe .....</b>	<b>1,635</b>	<b>1,237</b>	<b>1,235</b>	<b>1,222</b>	<b>1,158</b>	<b>1,080</b>	<b>1,008</b>	<b>970</b>	<b>-0.9</b>
<b>OECD Asia.....</b>	<b>471</b>	<b>782</b>	<b>853</b>	<b>883</b>	<b>885</b>	<b>889</b>	<b>899</b>	<b>899</b>	<b>0.2</b>
Japan .....	245	393	434	428	419	404	390	379	-0.5
South Korea .....	88	177	194	199	213	225	233	241	0.8
Australia/New Zealand .....	137	212	225	256	253	259	276	279	0.8
<b>Total OECD .....</b>	<b>4,028</b>	<b>4,277</b>	<b>4,345</b>	<b>4,566</b>	<b>4,579</b>	<b>4,595</b>	<b>4,728</b>	<b>4,917</b>	<b>0.5</b>
<b>Non-OECD</b>									
<b>Non-OECD Europe and Eurasia...</b>	<b>1,393</b>	<b>801</b>	<b>828</b>	<b>874</b>	<b>914</b>	<b>948</b>	<b>940</b>	<b>909</b>	<b>0.4</b>
Russia.....	624	410	441	464	467	492	503	499	0.5
Other .....	770	392	387	410	447	456	437	410	0.2
<b>Non-OECD Asia.....</b>	<b>2,517</b>	<b>4,229</b>	<b>4,957</b>	<b>6,421</b>	<b>7,417</b>	<b>8,386</b>	<b>9,175</b>	<b>9,971</b>	<b>2.7</b>
China.....	1,886	3,117	3,809	5,049	5,837	6,615	7,276	7,971	2.9
India .....	394	690	741	835	950	1,060	1,157	1,250	2.0
Other Non-OECD Asia .....	237	422	407	537	629	710	742	751	2.4
<b>Middle East .....</b>	<b>14</b>	<b>34</b>	<b>35</b>	<b>43</b>	<b>46</b>	<b>48</b>	<b>48</b>	<b>49</b>	<b>1.3</b>
<b>Africa .....</b>	<b>271</b>	<b>364</b>	<b>376</b>	<b>472</b>	<b>501</b>	<b>518</b>	<b>546</b>	<b>554</b>	<b>1.5</b>
<b>Central and South America .....</b>	<b>54</b>	<b>76</b>	<b>77</b>	<b>103</b>	<b>115</b>	<b>125</b>	<b>127</b>	<b>137</b>	<b>2.2</b>
Brazil .....	34	42	43	63	71	75	77	86	2.7
Other Central and South America..	20	34	34	40	45	50	50	51	1.6
<b>Total Non-OECD .....</b>	<b>4,248</b>	<b>5,505</b>	<b>6,272</b>	<b>7,912</b>	<b>8,993</b>	<b>10,025</b>	<b>10,837</b>	<b>11,620</b>	<b>2.4</b>
<b>Total World .....</b>	<b>8,277</b>	<b>9,782</b>	<b>10,617</b>	<b>12,478</b>	<b>13,572</b>	<b>14,620</b>	<b>15,565</b>	<b>16,536</b>	<b>1.7</b>

<sup>a</sup>Includes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site [www.eia.doe.gov/iea](http://www.eia.doe.gov/iea). **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run LM2007.D112106A, web site [www.eia.doe.gov/oiaf/aeo](http://www.eia.doe.gov/oiaf/aeo); and System for the Analysis of Global Energy Markets (2007).

